

CLAIMS:

1. A pipe flaring apparatus comprising a housing, a multi-jawed chuck located in the housing for supporting a pipe therein to be flared, means
5 in the housing for opening or closing the jaws of the chuck to clamp the jaws on to the pipe, and further means in the housing being operable to flare the ends of the pipe clamped in the jaws.

2. An apparatus as claimed in claim 1, wherein the multi-jawed
10 chuck comprises a tapered external surface.

3. An apparatus as claimed in claim 2, wherein the means for closing the jaws of the chuck comprises a chuck clamp having a tapered internal surface generally complementary to the external tapered surface of the multi-
15 jawed chuck and effects closing of the jaws of the chuck as the chuck is moved inwardly relative to the chuck clamp.

4. An apparatus as claimed in any preceding claim, wherein the further means comprises a flaring tool.

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5. An apparatus as claimed in claim 4, wherein the flaring tool is mounted on moveable means.

6. An apparatus as claimed in claim 5, wherein the movable means comprises a piston for moving the flaring tool into engagement with the end of the pipe to be flared.

5 7. An apparatus as claimed in claim 6, wherein the piston comprises first and second pistons.

8. An apparatus as claimed in claim 7, wherein the second piston is adapted to move the multi-jawed chuck into engagement with the chuck
10 clamp to close the jaws of the chuck about the pipe.

9. An apparatus as claimed in claim 7 or claim 8, wherein the flaring tool is mounted on the first piston for movement therewith.

15 10. An apparatus as claimed in claim 9, wherein the first piston is slidable relative to the second piston.

11. An apparatus as claimed in claim 9 or claim 10 wherein the first or inner piston is slidable within the second or outer piston.

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12. An apparatus as claimed in any of claims 7 to 11, including biasing means located between the first and second pistons for retracting the flaring tool from the pipe after the pipe is flared.

13. An apparatus as claimed in any preceding claim, including biasing means located between the closing means and the multi-jawed chuck for separating the closing means and multi-jawed chuck.

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14. An apparatus as claimed in any preceding claim, including biasing means located between the jaws of the chuck to open the jaws to disengage the flared pipe from the pipe flaring apparatus.

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15. An apparatus as claimed in any preceding claim, including hydraulic means for moving the closing and flaring means to close the jaws of the chuck and engage the flaring means within the pipe.

16. An apparatus as claimed in any preceding claim, further comprising a tool holder for supporting the flaring means.

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17. An apparatus as claimed in claim 16, wherein the tool holder extends transversely relative to a longitudinal axis of the housing.

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18. An apparatus as claimed in claim 16 or claim 17, wherein the housing includes two diametrically opposed windows through which the tool holder is arranged to extend.

19. An apparatus as claimed in claim 16, 17 or 18, wherein the tool holder extends through a recess in the flaring means.

20. An apparatus as claimed in claim 19 wherein the tool holder is
5 slidably mounted on the flaring means but fixed relative to a longitudinal axis of the flaring means.

21. An apparatus as claimed in claim 20, including a flaring tool mounted on the tool holder.

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22. A method of flaring a pipe comprising inserting a pipe to be flared into a housing through a multi-jawed chuck and closing means for closing the jaws of the chuck, and operating flaring means located in the housing to flare the end of the pipe.

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23. A method as claimed in claim 22, comprising closing the jaws of the chuck to clamp the jaws around the pipe to support the pipe during flaring or interengaging complementary tapering surfaces of the multi-jawed chuck and the chuck clamp.

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24. A method as claimed in claim 22 or claim 23, comprising moving the flaring means to flare the pipe.

25. A method as claimed in claim 24, wherein moving the flaring means comprises moving a piston to which a flaring tool is attached for flaring the end of a pipe.

5 26. A method as claimed in claim 25, wherein moving the piston comprises moving a first and a second piston.

27. A method as claimed in claim 26, comprising moving the second piston to close the jaws of the multi-jawed chuck.

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28. A method as claimed in claim 26 or 27, comprising moving the first piston to effect flaring of the pipe.

29. A method as claimed in claim 27 or claim 28, comprising moving
15 the first or inner piston relative to the second or outer piston.

30. A method as claimed in claim 29, comprising moving the inner piston within the outer piston.

20 31. A method as claimed in claim 30, comprising biasing the inner piston relative to the outer piston for retracting the flaring tool from the pipe after the pipe is flared.

32. A method as claimed in claim 31, comprising biasing the multi-jawed chuck relative to the chuck clamp to disengage the flared pipe from the flaring apparatus.

5 33. A method as claimed in any preceding claim, comprising moving the closing and flaring means to close the jaws of the chuck and engage the flaring means with the pipe by actuating hydraulic means.

10 34. A method as claimed in any preceding claim, comprising moving a tool holder transversely of the flaring means to locate a flaring tool for flaring a pipe.